

Title (en)

Metal oxide particle comprising the metals tin, zinc and antimony and process for producing same

Title (de)

Metalloxidpartikel, die die Metalle Zinn, Zink und Antimon enthalten sowie Verfahren zu ihrer Herstellung

Title (fr)

Particule fine d'oxyde métallique comprenant de l'étain, du zinc et de l'antimoine et procédé de préparation

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Application

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Abstract (en)

The present invention relates to a metal oxide particle comprising tin atom, zinc atom, antimony atom and oxygen atom, having a molar ratio $\text{SnO}_2\text{:ZnO:Sb}_2\text{O}_5$ of 0.01-1.00:0.80-1.20:1.00 and having a primary particle diameter of 5 to 500 nm; and a process for producing the metal oxide particle comprising the steps of: mixing a tin compound, a zinc compound and an antimony compound in a molar ratio $\text{SnO}_2\text{:ZnO:Sb}_2\text{O}_5$ of 0.01-1.00:0.80-1.20:1.00; and calcining the mixture at a temperature of 300 to 900 DEG C. The metal oxide particle is used for several purposes such as antistatic agents, UV light absorbers, heat radiation absorbers or sensors for plastics or glass, etc.

A metal oxide particle containing tin, zinc, antimony and oxygen comprises tin oxide (SnO_2), zinc oxide (ZnO) and diantimony pentoxide (Sb_2O_5) in a molar ratio of 0.01 - 1:0.8 - 1.2:1. The metal oxide particle has a primary particle diameter of 5 - 500 nm. Independent claims are included for the following: (1) producing the metal oxide particle involving: (i) mixing a tin compound, a zinc compound and an antimony compound such that the molar ratio of $\text{SnO}_2\text{:ZnO:Sb}_2\text{O}_5$ is 0.01 - 1:0.8 - 1.2:1; and (ii) calcining the mixture at 300 - 900[deg]C; (2) a sol comprising the metal oxide particle dispersed in an aqueous medium or an organic solvent; (3) a coating composition comprising the metal oxide particle; and (4) an optical member comprising a cured film formed by the coating composition on a surface of an optical substrate.

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